

SYSTEMS AND METHODS FOR OPTIMAL DISTRIBUTION OF  
SYMBOLS IN A FIXED SIZE DATA PACKET  
TO IMPROVE RECEIVER PERFORMANCE

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## ABSTRACT OF THE DISCLOSURE

There is disclosed a transmitter for transmitting a stream of known symbols and unknown symbols through a transmission channel to a first receiver that receives the transmitted stream of known symbols and unknown symbols distorted by intersymbol interference (ISI) and reduces therein an ISI signal. The transmitter comprises a known symbol distribution controller capable of inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of the first receiver.